

after the first wave. There are good wave producing mountains for 700 miles from S.E. to N.E. of Bishop, and a last glide from a spot such as Denver out over the plains would add several hundred miles more. With exceptional luck you might then still have an afternoon of thermals at your disposal. It is unusual for a wave condition to extend all the way from Bishop to Denver, but it does happen, perhaps several times a year. There are some relatively dry frontal systems which produce useable waves without a dangerous amount of cloud. You would travel over some uninhabited and uninviting terrain on this flight, safe to do only at high altitude. In other seasons this whole region, with its 25 mile spacing of mountains, would permit tremendous thermal flights; thermal flights there are not to be recommended until the area becomes more populated.

Still another distance flight method is to prolong the flight by staying up overnight on a slope and continuing the next day. This would mean flying about 36 hours, difficult but not actually unsafe if properly conducted. You need to find a high windward slope, with an airport or large flat land within gliding distance, and the hill should have a beacon on the top. The flight would be safest during a full moon. The glider should carry flares, and must have navigation lights. There are suitable spots at El Paso, Texas; Tucson, Arizona, and Milford, Utah. If the wind is strong enough to keep you comfortably aloft overnight, it would also help in increasing your ground speed to where you could get 400 or more miles per day.

A method discussed by some people is a frontal flight, where you start in Texas and fly northward along a cold front as the front moves eastward. With luck and great skill you might even get 1,000 miles, but the question is how to do it safely. There is undeniably good lift along the front, and you might be able to stay out of cloud much of the time, but you would probably be in cloud some of the time, right at a severe icing level. There would be bad, blind landing conditions. Other distance flight techniques are easier.

Goal and Return Flights

Much of what has been said in the preceding sections is valid for out and back flights. Starting the flight early, prolonging the end, or remaining up all night for a two-day flight can help for goal and return. An additional method is the use of a slope current to speed both legs. For ex-

ample, the west slope of the White Mountains in California can act as a 120 mile throughway on the north and south legs. You would still have to do considerable thermal flying to complete the legs if you want to beat Lyle Maxey's present international record. The Sangre de Cristo Range, the Appalachian Mountains, and even some lower buttes or river banks can be of help if they include safe landing spots all along the way.

Triangular Course Speed Flights

The point here is to pick the weather and terrain so as to avoid any wasted time. For example, any speed trial is enhanced if you wait until a towering cumulus is near the starting point. You start, then immediately catch lift which may average 1,800 feet per minute to 20,000 feet above the ground. Then with a single glide and no more lift you can complete the 100 km circuit, averaging over 60 mph with a 1-26. The same technique could even work with the 200 km circuit. As an alternative for the lift at the start of the flight, in a few spots even wave lift would be available. The principle involved here is to have the exact location of strong lift known to you. Another approach to this is to fly in the desert, say at El Mirage, when dust devils are indicating the lift.

Just as with the goal and return flights, a slope lying along one leg can speed up the trip. By choosing the perfect spot and weather, every present triangular course record could be broken starting in any state of the country.

In your distance and speed attempts always use a ring scale air-speed selector and a total energy variometer. Pick the optimum conditions—and never take a chance with safety.

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Mississippi State College Glider Club

1956 Activity Report

GUY B. STORER, *Instructor*

DR. A. RASPET, *Staff Sponsor*

The 1956 season has shown an appreciable advance toward our goal in youth air education—getting glider training established as a high school level activity. One high school student graduated in June leaving five active at the end of the year. Applications for the coming season indicate five more plus three college students in the ab initio group. We hope for a continuing expansion of interest in the high school age level.

We point with pride to a high school student, 14 years old, flying his silver "C" distance and altitude legs. Another, 15 years old, made a creditable showing in the National Contest by flying over 40 hours for a distance of nearly 1,000 miles in eight days. A high school girl, 15 years old, has progressed to the advanced stage of stalls and spot landings.

Our 1956 activity shows:

97 ground tows
142 straight tows
38 90° after release
1330 standard patterns

1607 total auto tows
41 aero tows

1648 total tows

The "break-even" policy of the club permitted a substantial reduction in rates this year. From \$33.00 per hundred to \$25.00. Ground tows are free.

171:10 hours were flown, of which 47:15 in ten tows were flown during the Texas expedition. 71:15 hours resulted from the 41 aero tows. Six students totaled 11:15 hours of soaring from auto tow of from 450' to 900' altitudes.

The operations cost \$239.36 for 1,607 auto tows or 15 cents for each tow. Extensive tow car repairs and tires cost \$79.00 of this total.

A 1954 Buick chassis, on loan from the Mechanical Engineering Department, has proven itself to be a superior piece of equipment and is surprisingly economical in operation.

High winds during the fall slowed down beginner training to a considerable extent. However, only one student was left in the ground tow stage.

The disproportionate number of standard patterns reflects the club's over-all status. Only six beginners were started during the year and three are already in the advanced stage.